

Quasi-experimental methods and inferences: Two studies on Covid-19 and technology engagement behavior

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Inference of causality in a complex socio-economic system is a challenging task. Economic decision-making is dynamic and inter-temporal in nature. The driving role of expectation in economic choices makes it difficult to apply the usual idea of causality in the form of sequence of observed cause and effects. At the same time, observational data comprising economic environments and choices made, suffer from endogeneity in the sense that the external environment affects optimal choices and choices in turn may affect the external environment (for example, inflation and interest rate). In presence of such endogeneous relationships, both contemporaneous and lagged correlations are typically uninformative and quite frequently, misinformative. This in turn makes time series analysis less effective in inference of causality from complex interactions.

In this talk, I will discuss some quasi-random experimental methods that allow us to break the problem of endogeneity and make causal inference about responses of economic agents to both pecuniary and non-pecuniary factors. In particular, I will describe two such natural experiments using Covid-19 as a shock to study how people's behavior regarding technological engagement changed and the resulting effects on welfare.

The key take away from this discussion would be the nature of data and the design of the quasi-experiments that makes it possible to apply such causal inference methods based on observational data.

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